SDU Off-line DIN Rail Uninterruptible Power Supply (UPS)

NEW

The SDU DIN Rail UPS combines an industry leading compact design with a wide operation temperature range and unique installation options. The SDU series provides economical protection from damaging impulses and power interruptions. These units include easy to wire screw terminations for critical devices needing battery back up such as computer based control systems.

CE c UL us
UL 1778
Ind. Application
E179213

Features

- Lightweight, compact industrial design
- Wide operation temperature range (0-50^{0}C)
- Cold start capability
- Phone/dataline surge protection
- Software and cable included for easy installation
- Simulated sinewave output
- RS232 Communication Port
- USB Communication Port (optional)
- Form C Dry Contact Relay (optional)
- Panel/Wall mounting brackets (optional)
- Two-year warranty

Applications

- Programmable Logic Controllers
- Factory Automation
- Robotics
- Conveying Equipment
- Computer-based control systems

Approvals

- 120V models are UL1778 c UL us recognized for industrial applications without derating.
  - No derating required in UL508 applications.
- 230V models are CE marked.

Related Products

- Portable MCR Power Conditioners
- STV25K

Selection Table

Capacity (VA/W)	Catalog Number	Volts, Frequency In/Out	Typical Runtime (minutes)*	Input/Output Connections	Approx. Ship Weight lbs (kg)
500/300	SDU500	120 VAC, 50/60 Hz	4	IP20 touch proof, screw terminals. Wire range: 10 ~ 24 AWG.	10.7 (4.7)
850/510	SDU850		2		11.4 (5.0)
500/300	SDU500-5	230 VAC, 50/60 Hz	4		11.5 (5.2)
850/510	SDU850-5		2		11.9 (5.4)

* At full load.

SDU Accessories

Catalog Number	Description	Approx. Ship Weight lbs (kg)
RELAYCARD-SDU	Dry contact I/O relay box, IP20 touch proof screw terminals, wire size range 12~22 AWG (IEC 2.5mm); N.O./N.C. form "C" contact. Relay contact signal for "On Battery", "Low Battery" and "UPS Shutdown".	1 (.45)
UPSMON-USB	RS232 to USB adapter cable	1 (.45)
SDU-PMBRK	Mouting brackets to secure UPS to wall, back of panel or enclosure.	1 (.45)

Visit our website at www.solaheviduty.com or
contact **Technical Services** at **(800) 377-4384** with any questions.

Courtesy of Steven Engineering, Inc. ● 230 Ryan Way, South San Francisco, CA 94080-6370 ● General Inquiries: (800) 670-4183 ● www.stevenengineering.com

SDU DIN Rail UPS Specifications

Catalog Number	SDU500	SDU850	SDU500-5	SDU850-5
Capacity (VA/Watts)	500/300	850/510	500/300	850/510
Load Power Factor	0.6			
Dimensions				
H x W x D in (mm)	4.88 x 11.1 x 4.55 (124 x 281 x 116)			
Weight lbs (kg)	10.7 (4.7)	11.4 (5.0)	11.5 (5.2)	11.9 (5.4)
Input Parameters				
Voltage	120V (+10%, - 20%)		230V (+/- 20%)	
Frequency	50 +/- 5 Hz or 60 Hz +/- 6 Hz (auto sensing)			
Output AC Parameters				
Voltage (Battery Mode)	Step sinewave			
	+/- 5%			
Frequency (On Battery)	50 or 60 Hz			
	+/- 0.3 Hz			
Overload Protection	UPS automatic shutdown if overload exceeds 105% of nominal at 20 seconds, 120% at 10 seconds, 130% at 3 seconds			
Short Circuit	UPS output cut off immediately			
Battery Parameters				
Battery Type	Sealed, Non-spillable, maintenance-free lead acid batteries			
Transfer Time	4 - 6 ms typical			
Back-up Time* (minutes)	4	2	4	2
Recharge Time	8 hours to 90% capacity after full discharge			
Environmental				
Operating Temperature	32°F to 122°F (0°C to 50°C)			
Storage Temperature	5°F to 140°F (-15°C to 60°C)			
Relative Humidity	1% to 95%, non-condensing			
Ambient Operation	1-95% humidity non-condensing, 0-50°C up to 5,000 ft (1500m)			
Audible Noise	< 40dBA (1 meter from surface)			
Standards				
Safety	UL 1778 C-UL Recognized for industrial applications in accordance with UL508 without derating. Overvoltage category 3, pollution degree 3. FCC Part 15, Subpart B, Class A		CE Marked; LVD: EN62040-1-1; EMC: EN50091-2, EN61000-3-2, EN61000-3-3, IEC801-2, IEC801-3, IEC801-4, IEC1000-2-2.	
Elevation	5000 ft without derating			
Shock & Vibration	According to the International Safe Transit Association standard ISTA 2A.			
Mounting	To be mounted on DIN TS35/7.5 or TS35/15 rail system. Chassis mounting permissible via optional brackets. Unit handles normal shock and vibration of industrial use and transportation without coming off rail.			

* At full load.

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S1K Off-line Uninterruptible Power Systems (UPS)

The S1K series provides economical protection from damaging impulses and power interruptions. These units include two types of outlets; three for critical devices needing battery back-up and surge protection such as the CPU and one surge protected only outlet for non-critical devices like printers and fax machines. The S1K is ideal for point of sale and office applications.

Features

- Lightweight, compact design
- 4 NEMA 5-15R outlets, (3 Battery, 1 Surge)
- Data-line surge protection for phone or network included on every unit.
- DB9 Communications Interface
- Software and cable included
- Step sinewave output
- Two-year warranty

Applications

- PCs
- Workstations
- Computer Terminals

Related Products

- S2K and S3K Series UPS
- Portable MCR Power Conditioners

Selection Table

Capacity (VA/W)	Catalog Number	Volts, Frequency In/Out	Typical Runtime (minutes)*	Input Plug/ Output Receptacle	Approx. Ship Weight lbs (kg)
320/240	S1K320	115 VAC, 50 or 60 Hz	10	5-15P / 5-15R (3) Battery (1) Surge	8.8 (4.0)
520/340	S1K520		15		11.6 (5.3)
650/390	S1K650		15		8.1 (3.7)
850/600	S1K850		25		10.8 (4.9)
1200/720	S1K1200		30		10.8 (4.9)
1500/900	S1K1500		70	5-15P / 5-15R (4) Battery	30 (13.6)

* For a typical PC with a 15” monitor.

S1K Accessory

Hardware for Wall/Panel Mount
(order part number separately)

Catalog Number	Description	Approx. Ship Weight lbs (kg)
S1K-PMBRK*	Wall/panel mount bracket kit for S1K (320VA~1200VA) UPS.	1 (.45)

* Not applicable to S1K-1500

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S1K Specifications

Catalog Number	S1K320	S1K520	S1K650	S1K850	S1K1200	S1K1500
Capacity (VA/Watts)	320/240	520/340	650/390	850/600	1200/720	1440/900
Dimensions - inches						
Unit (H x W x D)	5.3 in x 3.8 in x 10.4 in	5.3 in x 3.8 in x 12.6 in	5.3 in x 3.8 in x 10.4 in		5.3 in x 3.8 in x 12.6 in	7.5 in x 5.11 in x 15 in
Weight lbs (kg)	8.8 (4.0)	11.6 (5.3)	8.1 (3.7)		10.8 (4.9)	30 (13.6)
Input Parameters						
Voltage	115V + 20% / -25%		115V +/- 15%			115V +/-25%
Frequency	50 or 60 Hz ± 10% (auto sensing)					
Input Power Cord	6 ft. with NEMA 5-15P					
Output AC Parameters						
Voltage (Battery Mode)	Step sinewave at 115V					
	±10%		±5%			
Frequency (On Battery)	50 or 60 Hz					
	±1 Hz		±0.3 Hz			±1 Hz
Auto Voltage Regulation (AVR function under Normal Mode)	AVR automatically increases output voltage 15% above input voltage if 91% to 75% of nominal. AVR decrease output voltage 13% below input voltage if 109% to 125% of nominal		N/A			AVR automatically increases output voltage 15% above input voltage if 91% to 75% of nominal. AVR decrease output voltage 13% below input voltage if 109% to 125% of nominal
Overload Protection	UPS automatic shutdown if overload exceeds 105% of nominal at 20 seconds, 120% at 10 seconds, 130% at 3 seconds					UPS automatic shutdown if overload exceeds 110% of nominal at 60 seconds, 130% at 3 seconds
Short Circuit	UPS output cut off immediately					
Battery Parameters						
Battery Type	Sealed, maintenance-free lead acid batteries					
Transfer Time	4 milliseconds, Typical					
Back-up Time* (minutes)	10-20	15-25	15-30	25-40	30-45	70-80
Recharge Time	4 hours		6 hours			
Environmental						
Operating Temp.	32°F to 104°F (0°C to 40°C)					
Storage Temp.	5°F to 122°F (-15°C to 50°C)					
Relative Humidity	0% to 90%, non-condensing					
Ambient Operation	0-95% humidity non-condensing, 0-40°C up to 10,000 ft. (3000m)					
Audible Noise	< 40dBA (1 meter from surface)					
Standards						
Safety	UL 1778, $_{c}UL_{us}$ Listed					
Surge Protection	Meets IEEE C62.41, Category A					

* For a typical PC with a 15” monitor.

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Sola 2K Line-Interactive Uninterruptible Power Systems (UPS)

One of the most compact line-interactive model on the market, the S2K Series UPS's protect against most severe power disturbances including over/under voltages through state of art, line-interactive technology. Because all S2K Series UPS's are line-interactive, most power disturbance corrections are accomplished without transferring to the internal battery. Utility power is continually protected by the S2K Series UPS's and internal battery life is optimized.

The UPS has built in protection for under and over voltage conditions including low-energy lightning surges introduced on the input power source. Additionally, all S2K Series UPS are provided with an input circuit protector and a pair of surge protected data line connectors (RJ-45).

The S2K Series UPS's are provided with an automatic bi-weekly test function to insure the capability of the battery to supply power in emergency situations. Should the battery fail this test, the UPS will display a warning to indicate that the battery needs to be replaced.

Related Products

- Portable MCR Power Conditioners

Plug & Receptacle Reference Chart

5-15P 5-15R

Features

- 350 - 1000 VA
- Line-interactive with Data Line protection for telephone and network connections.
- Automatic Voltage Regulation (AVR) topology - saves battery power for deep voltage sag situations.
- Stepped sinewave output (Battery mode)
- Selectable input voltage
- Full sequence, automatic bi-weekly battery testing
- User replaceable, "hot swappable" batteries (Shutdown for battery replacement not required)
- MultiLink™ Power management software is available online.
- DB9 or USB communications cable included
- Protects against most adverse power conditions including:
  - Frequency variations
  - Spike
  - Blackouts
  - Surge
  - Sags
  - Over and under voltages

Applications

- PCs
- Workstations
- PLCs
- Computer peripherals

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Selection Table

Capacity (VA/W)	Catalog Number	Volts, Frequency In/Out	Typical Runtime (minutes)*	Input Plug/ Output Receptacle	Approx. Ship Weight lbs (kg)
350/210	S2K350	110/120/127, 50/60 Hz	8/26	5-15P / (4) 5-15R battery backup & surge; (2) 5-15R surge only	18.1 (8.2)
500/300	S2K500	110/120/127, 50/60 Hz	8/24	5-15P / (4) 5-15R battery backup & surge; (2) 5-15R surge only	18.5 (8.4)
650/390	S2K650	110/120/127, 50/60 Hz	5/16	5-15P / (4) 5-15R battery backup & surge; (2) 5-15R surge only	22.9 (10.4)
1000/600	S2K1000	110/120/127, 50/60 Hz	5/18	5-15P / (6) 5-15R battery backup & surge; (2) 5-15R surge only	31.9 (14.5)

* Full/Half load (in minutes).

Sola 2K Battery Run Time Charts

S2K (120 V) Battery Run Times (Minutes)

Load %	S2K350	S2K500	S2K650	S2K1000
10	139	128	93	103
20	72	58	39	47
30	45	41	30	34
40	34	28	21	23
50	26	24	16	18
60	19	17	11	13
70	15	15	10	10
80	12	11	8	8
90	10	10	7	7
100	8	8	5	5

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Sola 2K, 120 VAC Specifications

Catalog Number	S2K350	S2K500	S2K650	S2K1000
Capacity (VA/Watts)	350/210	500/300	650/390	1000/600
Dimensions - inches (mm)				
Unit (H x W x D)	8.7 in x 4.6 in x 7.7 in (222 mm x 116 mm x 196 mm)		8.7 in x 4.6 in x 14.1 in (222 mm x 116 mm x 358 mm)	
Shipping (H x W x D)	11.5 in x 7.7 in x 12.2 in (293 mm x 196 mm x 310 mm)		12.4 in x 9.5 in x 19.7 in (316 mm x 242 mm x 500 mm)	
Approx. Shipping Weight - lbs(kg)	18.1 (8.2)	18.5 (8.4)	22.9 (10.4)	31.9 (14.5)
Input AC Parameters				
Voltage Range without Battery Operation	78 to 150 VAC			
Line to Boost Transfer	104 VAC			
Line to Buck Transfer	124 VAC			
Frequency	46.5 - 63.5 Hz (±0.1 Hz)			
Input Power Cord	6 ft. (1.8m) attached, w/ NEMA 5-15P			
Output AC Parameters				
Voltage (Battery Mode)	120 VAC, ±8%			
Receptacles	(4) NEMA 5-15R (orange) Battery back-up + surge protection; (2) NEMA 5-15R (black) Surge Protection			(6) NEMA 5-15R (orange) Battery back-up + surge protection; (2) NEMA 5-15R (black) Surge Protection
Waveform (Battery Mode)	Stepped Sinewave			
Voltage (Normal)	Nominal (110, 120, 127 VAC) ±10%, configurable			
Frequency	50 Hz or 60 Hz; auto sensing			
Overload Warning (Utility and Battery Modes)	> 100%			
Overload Shutdown (Utility and Battery Modes)	> 110%			
Battery Parameters				
Battery Type	Valve-Regulated, Lead Acid, Non-spillable			
Battery Qty x Voltage x Rating	(1) x 12 V x 7.0 AH	(1) x 12 V x 9 AH		(2) x 12 V x 7.5 AH
Transfer Time	4-6 ms typical			
Back-up Time:	See Battery Run Time Charts			
Full Load	8 minutes	8 minutes	5 minutes	5 minutes
Half Load	26 minutes	24 minutes	16 minutes	18 minutes
Recharge Time	6 hours to 90% capacity, after full discharge into 100% resistive load			
Environmental				
Operating Temperature	+32°F to +104°F (0°C to +40°C)			
Storage Temperature	+5°F to +104°F (-15°C to +40°C)			
Relative Humidity	0% to 90%, non-condensing			
Operating Elevation	Up to 10,000 ft. (3000 m) at 86°F (30°C) without derating			
Audible Noise	Less than 40 dB @ 1 meter			
Agency				
Safety	UL 1778, C-UL Listed			
ESD	EN61000-4-2, Level 3, Criteria A			
Surge Protection	ANSI C62.41, Category A, Level 3 (IEEE 587, Category A); EN61000-4-5, Level 3, Criteria A			
Susceptibility	EN61000-4-3, Level 3, Criteria A			
Electrical Fast Transient/Burst	EN61000-4-4, Level 4, Criteria A			
Emissions	FCC Part 15, Subpart B, Class B			

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Sola 3K Mini-Tower Line-Interactive Uninterruptible Power Systems (UPS)

The S3K mini-tower is an economical choice for those applications requiring the performance of a sinewave output, line interactive UPS with the mini-tower shape for cabinet installations. The S3K Series UPS's protect against most severe power disturbances including over/under voltages through state of art, line-interactive technology. Most power disturbance corrections are accomplished without transferring to the internal battery. Utility power is continually protected by the S3K Series UPS's and internal battery life is optimized.

The UPS has built in protection for under and over voltage conditions including low-energy lightning surges introduced on the input power source. All S3K Series UPS are provided with an input circuit protector and surge protected data line connectors.

The S3K Series UPS's are provided with a battery test function to insure the capability of the battery to supply power in emergency situations. Should the battery fail this test, the UPS will display a warning to indicate that the battery needs to be replaced.

Applications

- Workstations
- PLCs
- Robotics and process control
- Industrial automation systems
- Automatic service & dispensing equipment

Related Products

- Portable MCR Power Conditioners
- DIN Rail mounted SPD (Surge Suppressors)
- S3K2U Rack/Tower UPS

Features

- 700 - 1440 VA
- Line-Interactive with Data Line protection for telephone and network connections.
- Mini-Tower design for control cabinet installation.
- Automatic Voltage Regulation (AVR) topology saves battery power for deep voltage sag situations.
- Sinewave output
- User replaceable, "hot swappable" batteries (Downtime for battery replacement not required).
- RS-232 Communications port
- Built-in surge protection
- Cold start capability (DC power on)
- Telephone/Modem spike protection
- Power Management software is included (UPSMON).
- 50/60 Hz auto sensing
- Fully digitized, microprocessor controlled
- Protects against most adverse power conditions including:
  - Frequency variations
  - Sags
  - Blackouts
  - Surge
  - Spike
  - Over and under voltages

Plug & Receptacle Reference Chart

5-15P 5-15R

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Selection Table

Capacity (VA/W)	Catalog Number	Volts, Frequency In/Out	Typical Runtime (minutes)*	Input Plug/Output Receptacle	Approx. Ship Weight lbs (kg)
700/480	S3K700	120/120, 50/60 Hz	5/14	(Detached) 5-15P / (4)5-15R	34.1 (15.5)
1000/750	S3K1000	120/120, 50/60 Hz	4/13	(Detached) 5-15P / (4)5-15R	37.0 (16.8)
1440/1200	S3K1600	120/120, 50/60 Hz	3/10	(Attached) 5-15P / (6)5-15R	70.4 (32)

* Full/Half Load (in minutes).

Sola 3K Mini-Tower Battery Run Time Chart

Load %	S3K700	S3K1000	S3K1600
10	86	82	52
20	45	37	27
30	28	27	16
40	21	18	12
50	14	13	10
60	11	10	8
70	9	8	6
80	7	6	5
90	6	5	4
100	5	4	3

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Sola 3K Mini-Tower, 120 VAC Specifications

Catalog Number	S3K700	S3K1000	S3K1600
Power Rating (VA/Watts)	700/480	1000/750	1440*/1200
Dimensions inches (mm)			
Unit (H x W x D)	8.3 in x 5.5 in x 17.2 in (210 mm x 140 mm x 436 mm)		8.9 in x 6.7 in x 17.7 in (226 mm x 170 mm x 450 mm)
Shipping (H x W x D)	11.75 in x 10.5 in x 19.2 in (300 mm x 265 mm x 492 mm)		14.0 in x 12.0 in x 22.25 in (358 mm x 307 mm x 581 mm)
Approx. Shipping Weight - lbs (kg)	34.1 (15.5)	37 (16.8)	70.4 (32)
Input AC Parameters			
Voltage Range	103-132 VAC		
Plug	6 ft. detachable with NEMA 5-15P		Attached 5-15P
Line to Boost Transfer	Maintains output to 120 VAC; -14%, when input is 120 VAC, -25%		
Line to Buck Transfer	Maintains output to 120 VAC; +10%, when input is 120 VAC, +23%		
Frequency	45-55 Hz or 55-65 Hz; auto sensing		
Output AC Parameters			
Voltage	103 VAC to 132 VAC		
Receptacles	(4) NEMA 5-15R		(6) NEMA 5-15R
Frequency	50 Hz or 60 Hz ±0.5%		
Waveform	Sine wave		
Overload Warning	100-110% Nominal		
Overload Shutdown	200% Nominal		
Battery Parameters			
Type	Valve-regulated, non-spillable, lead acid		
Battery Time (mins) (FL/HL)	5/14	4/13	3/10
Qty. x Voltage x Rating	4 x 12 V x 7 AH		6 x 12 V x 7 AH
Transfer Time	2-4 ms typical		
Back-up Time	See Battery Run Time Charts		
Recharge Time	4 Hours		
	to 90% rated capacity, after full discharge into resistive load		
Environmental			
Operating Temperature	+32°F to +104°F (0°C to +40°C)		
Storage Temperature	+5°F to +122°F (-15°C to +50°C)		
Relative Humidity	0% to 95%, non-condensing		
Operating Elevation	Up to 10,000 ft. (3000 m) at 35°C without derating		
Audible Noise	<40 dBA, (beyond 1 m)		<45 dBA, (beyond 1 m)
Agency			
Safety	UL 1778, cULus Listed		
RFI/EMI	FCC Part 15, Class B		
Immunity	IEC 801-2, Level 4 / IEC 801-4, Level 4 / ANSI C62.41 Category A & B		

* Note: 1200W at 0.75 power factor equals 1600VA. Line cord limits total load to 1440 VA (max).

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Sola 3K2U Rack/Tower Line-Interactive Uninterruptible Power Systems (UPS)

The slim 2U shape and advanced networking and remote control options make this UPS the perfect choice for networking or process control racks. The S3K2U Series UPS's protect against most severe power disturbances including over/under voltages through state of art sinewave, line-interactive technology. Utility power is continually protected by the S3K2U series while internal battery power is maintained for deep sag conditions.

The built-in protection for under and over voltage conditions of the S3K2U units includes low-energy lightning surge protection on the input power source. They are provided with an input circuit protector and a pair of surge protected data line connectors (RJ-45).

The S3K2U series include an automatic bi-weekly test function to ensure the capability of the battery to supply power in deep sag situations. Should the battery fail this test, the UPS will display a warning to indicate that the battery needs to be replaced.

Applications

- Workstations
- PLCs
- Robotics & process control
- Industrial automation systems

Accessories

- Power Distribution Modules
- SNMP Card (SNMP WEB CARD)
- Relay Card (RELAY CARD-INT)
- Extended battery option
- Rackmount Hardware

Plug & Receptacle Reference Chart

5-15P 5-15R L5-30P 5-20R

Features

- 1000 - 2200 VA
- Line-Interactive with Data Line protection for telephone and network connections.
- Automatic Voltage Regulation (AVR) topology
- High performance sine wave output
- Slim 2U rack or tower mounting (hardware and mounting feet included).
- Configurable input voltage
- Full sequence, automatic bi-weekly battery testing
- MultiLink™ power management software available online at www.solaheviduty.com.
- Remote EmergencyPower Off (REPO) function
- USB Interface Port
- SNMP capable with optional card
- Dry-contact relay outputs are available as an option.
- Standard two-year warranty
- Protects against most adverse power conditions including:
  - Frequency variations
  - Sags
  - Blackouts
  - Surge
  - Spike
  - Over and under voltages

Related Products

- Portable MCR Power Conditioners
- DIN Rail mounted SPD (Surge Suppressors)
- S4K UPS Series

Selection Table

Capacity (VA/W)	Catalog Number	Volts, Frequency In/Out	Typical Runtime (minutes)*	Input Plug/ Output Receptacle	Approx. Ship Weight lbs (kg)
1000/750	S3K2U1000	120/120, 50/60 Hz	11/26	(Attached) 5-15P / (8) 5-15R	80.7 (36.6)
1440/1080	S3K2U1440	120/120, 50/60 Hz	5/16	(Attached) 5-15P / (8) 5-15R	85.8 (39.0)
2200/1650	S3K2U2200	120/120, 50/60 Hz	5/16	(Attached) L5-30P / (6) 5-15R (2) 5-20R	95.9 (43.6)

* Full/Half Load (in minutes). See the Battery Runtime chart.

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Sola 3K2U Rack/Tower-mount, 120 VAC Specifications

Catalog Number	S3K2U1000	S3K2U1440	S3K2U2200
Power Rating (VA/Watts)	1000/750	1440/1080	2200/1650
Dimensions inches (mm)			
Unit (H x W x D)	3.43 in x 17 in x 22 in (87 mm x 430 mm x 557 mm)		3.43 in x 17 in x 24.1 in (87 mm x 430 mm x 612 mm)
Shipping (H x W x D)	11.8 in x 23.5 in x 27.8 in (300 mm x 598 mm x 706 mm)		13.1 in x 23.5 in x 34 in (333 mm x 598 mm x 864 mm)
Approx. Shipping Weight - lbs (kg)	81 (37)	86 (39)	96 (44)
Input AC Parameters			
Voltage Range	78-150 VAC		
Surge Protection	570J		
Voltage Range Without Battery	78-150 VAC		
Frequency	48-65 Hz (±0.1 Hz)		
Input Power Cord	10 ft. (3m) attached NEMA 5-15P		10 ft. (3m) attached NEMA L5-30P
Output AC Parameters			
Voltage	110/120/127 VAC ±10% (configurable)		
Receptacles	(8) NEMA 5-15R	(8) NEMA 5-15R	(6) NEMA 5-15R (2) NEMA 5-20R T-slot
Frequency	50 Hz or 60 Hz (±0.5Hz, auto-sensing)		
Waveform	Sinewave		
Overload Warning	> 100-110%		
Overload Shutdown	> 200% after 15 cycles		
Battery Parameters			
Type	Valve-regulated, non-spillable, lead acid		
Battery Time (mins) (FL/HL)	11/26	5/16	5/16
Qty. x Voltage x Rating	4 x 12 V x 7 AH	4 x 12 V x 7 AH	6 x 12 V x 7 AH
Transfer Time	2-6 ms typical		
Back-up Time	See Battery Run Time Charts		
Recharge Time	4 hours		
	to 95% capacity, after full discharge into 100% load		
Environmental			
Operating Temperature	+32°F to +104°F (0°C to +40 C)		
Storage Temperature	+5°F to +122°F (-15°C to +50°C)		
Relative Humidity	0% to 95%, non-condensing		
Operating Elevation	Up to 10,000 ft. (3000 m) at 35°C without derating		
Audible Noise	Max 50 dBA		Max 60 dBA
Agency			
Safety	UL 1778, $_{c}UL_{us}$ Listed		
RFI/EMI	FCC Part 15, Class B		FCC Part 15, Class A
Transportation	ISTA Procedure 1A Certification		
Immunity	ANSI C62.41, EN61000-4-2, 3, 4, 5, 6, EN61000-3-2, 3		

Note: These units are designed for EIA STD 19" wide rails and the UPS faceplate is 19" wide.

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Sola 3K2U Extended Battery Options

Battery Cabinet Specifications			
Catalog Number	**S3K48BAT**		**S3K72BAT**
UPS Rated VA	1000	1440	2200
Dimensions (H x W x D)	3.43 in x 17 in x 22 in (87 mm x 430 mm x 557 mm)		3.43 in x 17 in x 24 in (87 mm x 430 mm x 612 mm)
Weight (lb/kg)	66.1/30		118.1/53.6
Battery Parameters			
Type	Valve-regulated, non-spillable, lead acid		
Qty. x Voltage x Rating	2 strings of 4 x 12V x 7Ah		2 strings of 6 x 12V x 9Ah
Back-up Time	See Battery Run Time Charts		
Recharge Time	4 hours to 90% of rated capacity, after full discharge into resistive load		
Environmental			
Operating Temperature	32°F to 104°F (0°C to 40°C)		
Storage Temperature	5°F to 104°F (-15°C to 40°C)		
Relative Humidity	0% to 95%, non-condensing		
Operating Altitude	Up to 10,000 ft. (3000 m) at 95°F (35°C) without derating		
Audible Noise	<40 dBA, internal fan(s) off, <55 dBA, internal fan(s) on		
Agency			
Safety	UL 1778, cULus Listed, EN 62040-1-1, TUV/GS Listed, CE Marked		
Emmisions	FCC Part 15, Class B; EN 50091-2, Class B		
Transportation	ISTA Procedure 1A Certification		

Sola 3K2U Battery Run Times

	Load %	1000 VA	1440 VA	2200 VA
Internal Battery (minutes)	10	118	79	73
	20	65	45	47
	30	41	28	26
	40	37	24	23
	50	26	16	16
	60	24	14	13
	70	18	10	10
	80	16	9	8
	90	12	6	6
	100	11	5	5

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Sola 3K2U Battery Run Times - continued

	Load %	1000 VA	1440 VA	2200 VA
Internal Battery +1 External Battery Cabinet (minutes)	10	305	265	266
	20	248	188	185
	30	177	125	135
	40	139	104	122
	50	119	72	99
	60	98	59	75
	70	75	45	55
	80	63	40	49
	90	53	35	44
	100	46	30	40
Internal Battery +2 External Battery Cabinet (minutes)	10	565	461	493
	20	409	283	291
	30	283	219	222
	40	248	177	194
	50	209	133	150
	60	166	122	137
	70	136	98	122
	80	127	84	107
	90	110	64	92
	100	98	56	77
Internal Battery +3 External Battery Cabinet (minutes)	10	1001	655	-
	20	565	409	493
	30	409	283	283
	40	305	257	266
	50	274	209	222
	60	248	166	185
	70	209	136	156
	80	188	125	141
	90	145	110	131
	100	136	95	120
Internal Battery +4 External Battery Cabinet (minutes)	10	1174	828	-
	20	828	565	590
	30	513	357	395
	40	461	292	300
	50	305	257	274
	60	283	230	240
	70	257	188	203
	80	239	156	173
	90	209	136	156
	100	188	125	144

Courtesy of Steven Engineering, Inc. ● 230 Ryan Way, South San Francisco, CA 94080-6370 ● General Inquiries: (800) 670-4183 ● www.stevenengineering.com

Sola S4K2U Industrial On-Line Uninterruptible Power Systems (UPS)

The true on-line (double conversion) protection offered by the S4K2U Industrial UPS series eliminates a wider range of potential power problems (spikes, surges and extended overvoltage, noise and other transients, sags and extended brownouts), even difficult-to-track harmonics and dangerous frequency variations that are common with stand-by generator operation. These UPS modules are a true on-line design with a sinewave output in a slim 2U (3.5”) package.

Features

- Hardwire capability for permanent installation
- Small 2U height maximizes available space
- Two step battery recharge extends battery life
- PWM inverter reduces output voltage distortion
- Add on batteries for extended runtimes
- Integral sealed, non-spillable batteries for safe ground or air transportation.
- Hot swappable, user replaceable battery
- Automatic restart
- Automatic and manual battery test
- RS232 communication port easily interfaces with the PC.
- Rack-mount or Stand-alone tower mounting for 700 - 3000 VA units
- 700 - 3000 VA units are field configurable with a PC as a frequency converter (bypass will be disabled).
- Integral dynamic bypass reduces shutdowns
- Compatible with most standby generators
- Input and output noise suppression
- Two year limited warranty
- $25,000 UPS Power Protection Promise

The LED display indicates battery capacity, percentage of UPS load, battery operation, bypass operation and UPS fault condition. The rack-tower models are also supplied with securing flanges and rack slide mounting hardware.

Units can be easily hardwired by removing the attached line cord and receptacle plate. All S4K2U Industrial models include a conduit knockout cover in the box.

Note: The securing flanges do not support the weight of the UPS. Rack slides or shelves are required (sold separately).

Plug & Receptacle Reference Chart

5-15P	5-20P	L5-30P	5-20R

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Selection Table - S4K2U Tower/Rack-mount Models

Capacity (VA/W)	Catalog Number	Typical Runtime (minutes)*	Input Plug/Output Receptacle	Approx. Ship Weight lbs (kg)
120 VAC,50/60 Hz Models				
700/490	S4K2U700	17/44	5-15P / (4) 5-15R	50 (22.7)
1000/700	S4K2U1000	11/25	5-15P / (4) 5-15R	51 (23.1)
1500/1050	S4K2U1500	7/20	5-15P / (4) 5-15R	52 (23.6)
2000/1400	S4K2U2000	6/14	5-20P / (4)5-20R (15/20 amp type)	56 (25.4)
3000/2100	S4K2U3000	5/16	L5-30P / (4)5-20R (15/20 amp type), L5-30R	76 (34.5)

* Full/Half Load (in minutes).

External Battery Cabinets

External battery cabinets are designed to provide all tower/rack-mount models with extended run time. Battery cabinets contain the interconnecting cable for attachment to the UPS. Refer to page 76 for Extended Warranty information.

Catalog Number	Typical Runtime (minutes)*	Battery Cabinet (Quantity)	Battery Cabinet Catalog Number	Approx. Ship Weight lbs (kg)
S4K2U700	17/44	Internal	N/A	- (-)
	68/176	One	S4K2U48BAT	71 (32.3)
	136/352	Two	S4K2U48BAT	142 (64.6)
S4K2U1000	11/25	Internal	N/A	- (-)
	44/100	One	S4K2U48BAT	71 (32.3)
	88/200	Two	S4K2U48BAT	142 (64.6)
S4K2U1500	7/20	Internal	N/A	- (-)
	28/80	One	S4K2U48BAT	71 (32.3)
	56/160	Two	S4K2U48BAT	142 (64.6)
S4K2U2000	6/14	Internal	N/A	- (-)
	18/42	One	S4K2U48BAT	71 (32.3)
	49/98	Two	S4K2U48BAT	142 (64.6)
S4K2U3000	5/16	Internal	N/A	- (-)
	20/64	One	S4K2U96BAT	103 (46.5)
	40/128	Two	S4K2U96BAT	205 (93)

* Full/Half Load (in minutes).

Note: Contact ***Technical Services*** for longer runtimes.

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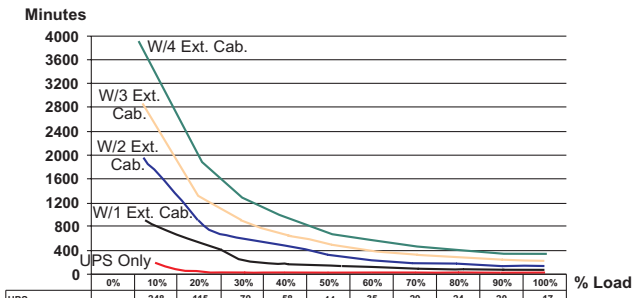
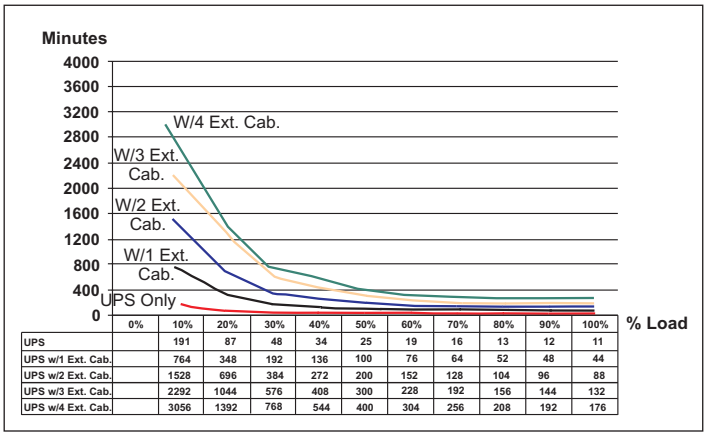
S4K2U Battery Run Time[1] Charts - continued

S4K2U700 Model



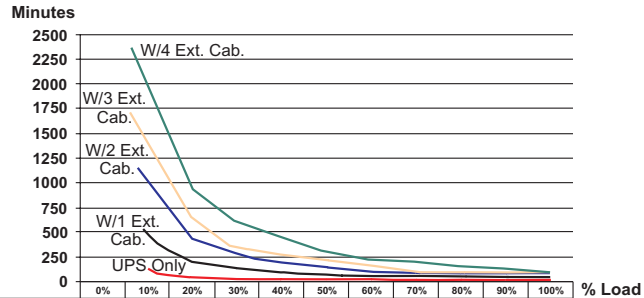
	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
UPS		248	115	79	58	44	35	29	24	20	17
UPS w/1 Ext. Cab.		992	460	316	232	176	140	116	96	80	68
UPS w/2 Ext. Cab.		1984	920	632	464	352	280	232	192	160	136
UPS w/3 Ext. Cab.		2976	1380	948	696	528	420	348	288	240	204
UPS w/4 Ext. Cab.		3968	1840	1264	928	704	560	464	384	320	272

S4K2U1000



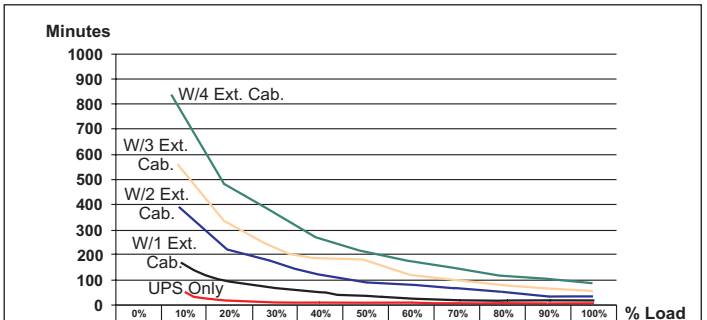
	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
UPS		191	87	48	34	25	19	16	13	12	11
UPS w/1 Ext. Cab.		764	348	192	136	100	76	64	52	48	44
UPS w/2 Ext. Cab.		1528	696	384	272	200	152	128	104	96	88
UPS w/3 Ext. Cab.		2292	1044	576	408	300	228	192	156	144	132
UPS w/4 Ext. Cab.		3056	1392	768	544	400	304	256	208	192	176

S4K2U1500 Model



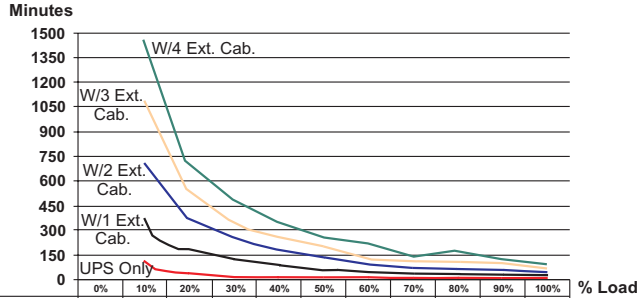
	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
UPS		144	53	38	28	20	15	12	10	8	7
UPS w/1 Ext. Cab.		576	212	152	112	80	60	48	40	32	28
UPS w/2 Ext. Cab.		1152	424	304	224	160	120	96	80	64	56
UPS w/3 Ext. Cab.		1728	636	456	336	240	180	144	120	96	84
UPS w/4 Ext. Cab.		2304	848	608	448	320	240	192	160	128	112

S4K2U2000



	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
UPS		56	33	26	19	14	12	10	8	7	6
UPS w/1 Ext. Cab.		168	99	78	57	42	36	30	24	21	18
UPS w/2 Ext. Cab.		392	231	182	133	98	84	70	56	49	42
UPS w/3 Ext. Cab.		560	330	260	190	140	120	100	80	70	60
UPS w/4 Ext. Cab.		840	495	390	285	210	180	150	120	105	90

S4K2U3000



	0%	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
UPS		91	46	30	21	16	11	9	8	7	5
UPS w/1 Ext. Cab.		364	184	120	84	64	44	36	32	28	20
UPS w/2 Ext. Cab.		728	368	240	168	128	88	72	64	56	40
UPS w/3 Ext. Cab.		1092	552	360	252	192	132	108	96	84	60
UPS w/4 Ext. Cab.		1456	736	480	336	256	176	144	128	112	80

Note:

1. Run times are at 25°C, 77°F, with 100% capacity batteries and resistive loads.

Sola S4K2U, 120 VAC, 50/60 Hz Tower/Rack-mount Models Specifications

Catalog Number	S4K2U700	S4K2U1000	S4K2U1500	S4K2U2000	S4K2U3000
Capacity (VA/Watts)	700/490	1000/700	1500/1050	2000/1400	3000/2100
Dimensions - inches (mm)					
Unit (H x W x D)	17 in x 3.5 in x 21.5 in (432 mm x 89 mm x 546 mm)				17 in x 3.5 in x 24.2 in (432 mm x 89 mm x 618 mm)
Shipping (H x W x D)	23 in x 10 in x 27 in (584 mm x 254 mm x 685 mm)				
Approx. Shipping Weight - lbs (kg)	58 (26)	58 (26)	60 (27)	63 (28)	78 (35)
Input AC Parameters					
Voltage Range (typical)	120 VAC nominal; variable based upon output load				
100% - 90% Loading	80-83 VAC to 134-138 VAC		90-93 VAC to 134-138 VAC		
90% - 70% Loading			80-83 VAC to 134-138VAC		
70% - 30% Loading	70-73 VAC to 134-138 VAC				
30% - 0% Loading	60-63 VAC to 134-138 VAC				
Frequency	48.1-51.9 Hz or 57.6-62.4; auto sensing				
Input Connector	6 ft. Attached, w/ NEMA 5-15 Plug			10 ft. Attached, w/ NEMA 5-20 Plug	10 ft. Attached, w/ NEMA L5-30 Plug
Output AC Parameters					
Voltage	100/110/120/127 VAC; ±3% user configurable				
Receptacles	(4) NEMA 5-15R			(4) NEMA 5-20R T-slot, accepts 15A plug	(4) NEMA 5-20R T-slot (1) NEMA L5-30R on 12 in cord
Frequency	50 Hz or 60 Hz				
Waveform	Sinewave				
Utility Mode Overload	200% for 8 cycles; 130% for 10 seconds with transfer to bypass				
Battery Parameters					
Battery Type	Valve-Regulated, non-spillable, lead acid				
Battery Qty x Voltage x Rating	4 x 12 V x 7 or 7.2 AH			4 x 12 V x 9AH	6 x 12 V x 9AH
Back-up Time	See Battery Runtime Charts				
Environmental					
Operating Temperature	+32°F to +104°F (0°C to +40°C)				
Storage Temperature	+5°F to +122°F (-15°C to +50°C)				
Relative Humidity	0% to 95%, non-condensing				
Operating Elevation	Up to 10,000 ft. (3000 m) at 104°C (40°C) without derating				
Storage Elevation	15.000m (50,000 ft.) maximum				
Audible Noise	Less than 45 dBA @ 1 meter				
Agency					
Safety	UL 1778, c-UL Listed				
RFI/EMI	FCC Part 15, Subpart B, Class A				
Immunity	IEEE / ANSI C62.41 Category A & B				

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External Battery Cabinets Specifications

Catalog Number	S4K2U48BAT	S4K2U96BAT
Used with UPS Model	S4K2U700 S4K2U1000 S4K2U1500 S4K2U2000	S4K2U3000
Dimensions - inches (mm)		
Unit (H x W x D)	17 in x 3.5 in x 21.5 in (432 x 89 x 546)	17 in x 3.5 in x 24.2 in (432 x 89 x 618)
Shipping (H x W x D)	23 in x 10 in x 27 in (584 x 254 x 685)	23 in x 10 in x 27 in (584 x 254 x 685)
Approx. Shipping Weight - lbs (kg)	71.1 (32.3)	102.5 (46.5)
Battery Parameters		
Type	Valve-regulated, non-spillable, lead acid	
Battery Qty x Voltage x Rating	(2 x 4) 12 V x 7.0 or 7.2 AH	(2 x 6) 12 V x 7.0 or 9.0 AH
Back-up Time	See Battery Run Time Charts	
Recharge Time	5 Hours to 95% capacity after full discharge into 100% load	
Environmental		
Operating Temperature	+32°F to +104°F (0°C to +40°C)	
Storage Temperature	+5°F to +122°F (-15°C to +50°C)	
Relative Humidity	0% to 95%, non-condensing	
Operating Elevation	Up to 10,000 ft. (3000 m) at 104°C (40°C) without derating	
Storage Elevation	15.000 m (50,000 ft.) maximum	
Agency		
Safety	UL 1778, c-UL listed (Suitable for computer room applications) EN50091-1-1, CE compliance mark, for both Low Voltage and EMC Directives	

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Sola S4K4U 6 kVA and S4K6U 10 kVA Industrial On-Line UPS

The S4K4U6000 and the S4K6U10000 Industrial UPS Series are the first true On-Line industrial UPS that provide flexible output voltage, an integrated maintenance bypass switch and internal batteries all in slim 4U (7.0”) and 6U (10.5") enclosures respectively.

The S4K4U and S4K6U features true On-Line (double conversion) topology providing the ultimate in protection against a wide range of potential power problems. The S4K4U design of two 3 kVA, 120V inverters allow flexible output voltage to meet mixed load voltage requirements. The UPS automatically configures the output voltage to match the input configuration without requiring tap selections. Self diagnostics simplify maintenance and troubleshooting, and the UPS can be serviced by the end-user. The standard maintenance bypass switch provides an additional level of protection.

The S4K4U and S4K6U also feature a wide input voltage window to support the critical load without having to transfer to the battery. This extends system availability when back-up is truly needed.

Features

- True double conversion topology
- Both models offer 208/120V or 240/120V
- Configurable as a Tower or Rack mounting
- Highest density, 6 kVA in only 4U and 10 kVA in only 6U of rack space
- Easily installed in 18” to 32” deep rack using rack mount kit # SRS1832
- User replaceable, hot-swappable internal battery module
- Extended Battery Cabinets
- Includes both automatic and manual maintenance bypass switch
- Automatic frequency detection (60 or 50 Hz)
- Power Factor Correction
- Self-Diagnostics simplify maintenance and troubleshooting
- Remote Emergency Power Off (REPO)
- Intellislot Communication port
- Built in Serial Communications and Closure Signals
- Compatible with most standby generators
- Standard two-year limited warranty

Applications

- Industrial Computers
- Robotics and process controls
- Industrial Automation Systems
- Network servers
- Enterprise telecommunication systems
- Printing and publishing machinery
- Industrial and commercial machinery
- Pharmaceutical and medical diagnosis equipment
- Micro processor controlled equipment
- Mission Critical devices

Visit our website at www.solaheviduty.com or
contact **Technical Services** at **(800) 377-4384** with any questions.

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Sola S4K4U 6 kVA and S4K6U 10 kVA Models Specifications

Catalog Number	S4K4U6000	S4K6U10000
Model Rating	4200W/6000VA at 120/240 (180° only - phase angle)	8000W/8660VA at 120/208 (120 or 240° only)
	4200W/5200VA at 127/220 (120 or 240° only - phase angle) *	8000W/10000VA at 120/240 (180° only)*
	4200W/5200VA at 120/208 (120 or 240° only - phase angle)	8000W/8660VA at 127/220 (120 or 240° only)
	4200W/6000VA at 115/230 (180° only - phase angle) *	8000W/10000VA at 115/230 (180° only)*
	3780W/5400VA at 110/220 (180° only - phase angle) *	7200W/9000VA at 110/220 (180° only)*
	3360W/4800VA at 100/200 (180° only - phase angle) *	6400W/8000VA at 100/200 (180° only)*
Dimensions - inches (mm)		
Unit (W x D x H)	6.9 x 24.2 x 16.9 (176 x 615 x 430)	10.5 x 29 x 16.93 (267 x 737 x 430)
Shipping (W x D x H)	13.2 x 27.8 x 20.9 (335 x 705 x 530)	16.5 x 34.3 x 22.8 (420 x 870 x 580)
Approx. Shipping Weight - lbs (kg)	76.3 (34.6)	118 (53.6)
Input AC Parameters		
Nominal Operating Frequency	50 or 60 Hz (Factory Default = 60)	
Factory Default VAC	208 VAC at 120° phase angle (neutral required)	
L1-L2 Factory Default Input Phase Angle	120°	
Allowable Input Phase Angle	120, 180, 240°, Auto-sensing on application of AC (Restrictions for L-N voltages other than 120 VAC)	
Factory Default	L1-N, L2-N VAC 120 VAC nominal	
User Configurable L1-N, L2-N VAC	100/110/115/120/127 VAC (May be modified using configuration program)	
L1-N, L2-N, Operating Voltage Range Without Battery Operation (Except 100 VAC L-N Operation)		
100% - 90% loading	90 VAC - 140 VAC	
90% - 70% loading	80 VAC - 140 VAC	
70% - 30% loading	70 VAC - 140 VAC	
30% - 0% loading	60 VAC - 140 VAC	
L1-N, L2-N, Operating Voltage Range Without Battery Operation (100 VAC L-N Operation)		
100% - 70% loading	80 VAC - 140 VAC	
70% - 30% loading	70 VAC - 140 VAC	
30% - 0% loading	60 VAC - 140 VAC	
L1-N, L2-N Max. Allowable VAC	150 VAC	
Input Frequency w/o Battery Operation	40 - 70 Hz	
Input Power Connection	Hardwire Terminal Block 3W + G (L-L-N-G)	
Output AC Parameters		
Factory Default VAC	120/208 VAC @ 120° phase angle	
L1-L2 Factory Default Output Phase Angle	120°	
Allowable Output Phase Angle	120, 180, 240° Auto-sensing on initial application of input AC	
Factory Default L1-N, L2-N VAC	120 VAC nominal	
User Configurable L1-N, L2-N VAC	100/110/115/120/127 VAC, ±3%	
Output Connections	Hardwire Terminal Block 3W + G (L-L-N-G)	
Frequency	50 Hz or 60 Hz, Nominal	
Waveform	Sinewave	
Main Mode Overload	200% for 8 cycles; 130% for 10 seconds with transfer to bypass	

* Other voltage ratings.

Visit our website at www.solaheviduty.com or
contact **Technical Services** at **(800) 377-4384** with any questions.

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Sola S4K4U 6 kVA and S4K6U 10 kVA Models Specifications - continued

Catalog Number	S4K4U6000	S4K6U10000
	Bypass Protection Limits	
Disable Bypass Operation	If input voltage exceeds ±15% of the nominal voltage	
Re-enable Bypass Operation	If input voltage returns to within ±10% of the nominal output voltage	
Disable Bypass Operation	When the input frequency prevents synchronous operation	
	Environmental	
Operating Temperature	+32°F to +104°F (0°C to +40°C)	
Storage Temperature	+5°F to +122°F (-15°C to +50°C)	
Relative Humidity	0% to 95%, non-condensing	
Operating Elevation	Up to 10,000 ft. (3000m) at 104°F (40°C) without derating	
Storage Elevation	50,000 ft. (15,000 m) maximum	
Audible Noise	<55 dBA, at 1 meter from the rear; <50 dBA, at 1 meter from the front or sides	
	Agency	
Safety	UL 1778, c-UL Listed (Suitable for computer room applications)	
RFI/EMI	FCC Part 15, Subpart B, Class A	
Surge Immunity	IEEE/ANSI C62.41 Category A & B	
Transportation	ISTA Procedure 1A	

Internal Battery Specifications

Model Number	S4K144INTBAT	S4K288INTBAT (2 Required)
Used w/ UPS Model	S4K4U6000	S4K4U10000 AND S4K288BAT
Shipping (W x D x H) - in. (mm)	13.4 x 27.2 x 13.4 (340 x 690 x 340)	11.0 x 24.8 x 16.5 (280 x 630 x 420)
Unit Weight lbs (kg)	79 (35.8)	78.1 (35.5)
Shipping Weight lbs (kg)	84 (38.1)	83.6 (38)
Type	Valve-regulated, non- spillable, flame retardant, lead acid	
Quantity x V x Rating	12 x 12V x 9.0 AH	(2) x 12 x 12V x 9.0 AH
Battery Mfg / Part #	Yuasa / REW 45-12 FR	
Back-Up Time	See Table - Battery run times	
Recharge Time	6 Hours to 90% capacity after full discharge into 100% load	

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Sola S4K4U 6kVA and S4K6U 10 kVA Models Specifications - continued

External Battery Specifications

Model Number	S4K144BAT	S4K288BAT
Used w/ UPS Model	S4K4U6000	S4K4U10000
Dimensions - inches (mm)		
Unit (with bezel) (W x D x H)	3.5 x 24.2 x 17 (87 x 618 x 430)	7.0 x 27 x 16.93 (178 x 686 x 430)
Shipping (W x D x H)	10.5 x 27.2 x 23 (268 x 692 x 585)	13.0 x 34.3 x 22.8 (330 x 870 x 580)
Weight lbs (kg)		
Unit	93.6 (42.5)	41.6 (18.9)
Shipping	105 (47.6)	50.6 (23)
Battery Parameters		
Type	Valve-regulated, non-spillable, flame retardant, lead acid	
Qty x V x Rating	12 x 12V x 9.0 AH	(2) x 12 x 12V x 9.0 AH
Battery Mfg / Part #	Yuasa / REW 45-12 FR	
Back-Up Time	See Table - Battery run times	
Environmental		
Operating Temp	+32°F to +104°F (0°C to +40°C)	
Storage Temp	+5°F to +122°F (-15°C to +50°C)	
Relative Humidity	0% to 95%, non-condensing	
Operating Elevation	Up to 10,000 ft. (3000m) at 104°F (40°C) without derating	
Storage Elevation	50,000 ft. (15,000m) maximum	
Agency		
Safety	UL 1778, c-UL Listed (Suitable for computer room applications)	
RFI/EMI	FCC Part 15, Subpart B, Class A	
Transportation	ISTA Procedure 1A	

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Sola S4K4U 6kVA and S4K6U 10 kVA Models Battery Run Times

Battery/ External Cabinets	Load %	6000VA Run Time in Minutes	10000VA Run Time in Minutes
Internal Battery	10%	75	107
	20%	38	52
	30%	25	31
	40%	18	22
	50%	14	16
	60%	11	13
	70%	9	10
	80%	7	9
	90%	6	7
	100%	5	6
Internal Battery + 1 External Battery Cabinet	10%	156	251
	20%	90	118
	30%	62	74
	40%	44	52
	50%	34	39
	60%	28	32
	70%	23	26
	80%	19	22
	90%	16	19
	100%	14	17
Internal Battery + 2 External Battery Cabinets	10%	235	333
	20%	137	216
	30%	99	118
	40%	74	85
	50%	58	66
	60%	47	53
	70%	39	44
	80%	33	38
	90%	28	32
	100%	25	28

Battery/ External Cabinets	Load %	6000VA Run Time in Minutes	10000VA Run Time in Minutes
Internal Battery + 3 External Battery Cabinets	10%	313	494
	20%	183	265
	30%	133	191
	40%	103	119
	50%	82	92
	60%	67	75
	70%	55	62
	80%	47	54
	90%	41	74
	100%	36	41
Internal Battery + 4 External Battery Cabinets	10%	391	590
	20%	229	295
	30%	166	236
	40%	129	178
	50%	105	119
	60%	87	98
	70%	73	82
	80%	63	71
	90%	54	61
	100%	47	54

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Sola S4K4U 6kVA and S4K6U 10 kVA Models Optional Output Distribution Specifications

Model Number	S4KPAD-001	S4KPAD-101	S4KPAD-102
Used w/ UPS Model	S4K4U6000	S4K6U10000	S4K6U10000
Amp Rating	24 Amps	40 Amps	40 Amps
Input Power Connections	L14-30P on 10 foot cord	Internal Anderson Connectors	
Output Power Connection			
L1-L2-G	(1) L6-30R on a 300mm cord	(2) L6-30R on a 300mm cord	(4) L6-20R on a 300mm cord
L1-L2-N-G	(1) L14-30R on a 300mm cord	N/A	N/A
L1-N-G	(2) 5-15/20R, T-type, receptacles with (2) 20A circuit breakers	(4) 5-15/20R, T-type, receptacles with (2) 20A circuit breakers	(2) 5-15/20R, T-type, receptacles with (1) 20A circuit breakers
L2-N-G	(2) 5-15/20R, T-type, receptacles with (2) 20A circuit breakers	(4) 5-15/20R, T-type, receptacles with (2) 20A circuit breakers	(2) 5-15/20R, T-type, receptacles with (1) 20A circuit breakers
Input Branch Circuit Breaker	30 Amp, Supplied by User	50 Amp, Supplied by User	50 Amp, Supplied by User
Shipping (W x D x H) in. (mm)	3.5 x 24.2 x 17 (87 x 618 x 430)	3.5 x 24.2 x 17 (87 x 618 x 430)	7.87 x 8.85 x 10.43 (200 x 225 x 265)
Weight lbs (kg)			
Unit	3.8 (1.7)	3.8 (1.7)	4.6 (2.1)
Shipping	5.1 (2.3)	5.1 (2.3)	6.0 (2.7)

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S3K2U, S4K2U, S4K4U and S4K5U Accessories

Hardware for Rack Mount
(order part number separately)

Catalog Number	Description	Approx. Ship Weight lbs (kg)
Rack Slide Kits		
SRS1832	Rack slide kit for racks with 18-32” deep support rails.	8 (3.6)

Optional Equipment

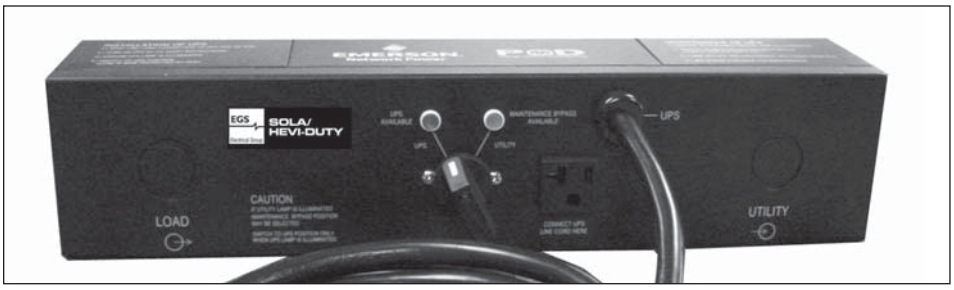
Catalog Number	Description
Communications Options	
SNMPWEB CARD	Ethernet communications kit, (Supports SNMP, HTTP and OCP) includes SNMP hardware, MIB, configuration cable and installation manual.
RELAYCARD-INT	Relay contact board, 2 relay contact signals **each independently configured** for “On Battery”, “Low Battery”, “On Bypass”, "On UPS", “Summary Alarm” and “UPS Fault” (rated at 24v @ 1a AC or DC).

Power A/C Distribution (PAD)

PADs provide output distribution, input connection and a rotary maintenance bypass switch. The PAD is field installed by the customer and allows the UPS to be removed without interrupting power to the load.

Catalog Number	Description	Series
A2D115HW	120 Volt, Hardwired for use with 15 Amp Input	S3K2U (1000 - 1440 VA Models) S4K2U (700 - 1500 VA Models)
A2D120HW	120 Volt, Hardwired for use with 20 amp Input	S4K2U (2000 VA Model)
A2D130HW	120 Volt, Hardwired for use with 30 amp input.	S4K2U (3000 VA Model)

Note: PADs can only be used with units having matching receptacles for the line cords provided.



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Sola S4K5U 6 kVA International On-Line Uninterruptible Power System (UPS)

The S4K5U6000-5 Industrial On-Line UPS Series is designed for international usage and provides flexible output voltage, an integrated maintenance bypass switch and internal batteries all in a slim 5U (8.7") enclosure.

The S4K5U features true On-Line (double conversion) topology providing the ultimate in protection against a wide range of potential power problems. Flexible output voltages (220/230/240 Volt) are available through the configuration program to allow for international use. One of the three L-N output voltages is selected to match the local voltage. Self diagnostics simplify maintenance and troubleshooting, and the UPS can be serviced by the customer. The standard maintenance bypass switch provides an additional level of protection.

The S4K5U also features a wide input voltage window to support the critical load without having to transfer to the battery. This extends system availability when back-up is truly needed.

Features

- True double conversion topology
- Flexible L-N output voltage (220/230/240V)
- Configurable as a Tower or Rackmount model
- High density, 6 kVA in only 5U of rack space
- Easily installed in 18" to 32" deep rack using rack mount kit # SRS1832
- User replaceable, hot-swappable internal battery module
- Matching 4U Extended Battery Cabinets
- Includes both automatic and manual maintenance bypass switch
- Automatic frequency detection of either 60 or 50 Hz
- Power Factor Correction
- Self-Diagnostics simplify maintenance and troubleshooting
- Remote Emergency Power Off (REPO)
- Intellislot Communication port
- Built in Serial Communications and Closure Signals
- Compatible with most standby generators
- Limited two-year warranty

Applications

- Industrial Computers
- Robotics and process controls
- Industrial Automation Systems
- Network servers
- Enterprise telecommunication systems
- Printing and publishing machinery
- Industrial and commercial machinery
- Pharmaceutical and medical diagnosis equipment

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Sola S4K5U 6 kVA Model Specifications

Catalog Number	S4K5U6000-5
Model Rating	6kVA / 4,200W
Dimensions inches (mm)	
Unit (W x D x H)	8.7 x 21.5 x 16.9 (221 x 547 x 430)
Shipping (W x D x H)	22.05 x 27.17 x 19.7 (560 x 690 x 500)
Shipping Weight - lbs (kg)	175.3 (79.5)
Input AC Parameters	
Nominal Operating Frequency	50 or 60Hz (Factory Default = 50)
Factory Default VAC	230VAC
User Configurable VAC	220/230/240VAC (May be modified using configuration program)
Operating Voltage Range Without Battery Operation	176 – 276VAC
Maximum Allowable VAC	276VAC
Input Frequency Without Battery Operation	40 - 70Hz
Input Power Connection	See Power Distribution Box
Output AC Parameters	
Factory Default VAC	230VAC
Output Connections	See Power Distribution Box
Frequency	50Hz or 60Hz, Nominal
Waveform	Sinewave
Main Mode Overload	>200% for 96 milliseconds; 131 - 199% for 2 seconds; 112- 129% for 10 seconds with transfer to bypass
Battery Parameters	
Type	Valve-regulated, non-spillable, lead acid
Quantity x V	20 x 12V
Battery Mfr. / Part #	Yuasa / REW 28-12
Back-up Time	See Battery Run Times Table
Recharge Time (Internal Batteries)	3 hrs. to 90% capacity after full discharge into 100% load
Bypass Protection Limits	
Disable Bypass operation	If input voltage exceeds ±15% of the nominal voltage
Re-enable Bypass operation	If input voltage returns to within ±10% of nominal output voltage
Disable Bypass operation	When the input frequency prevents synchronous operation
Power Distribution Box	
Amps Rating	32 Amps
Input Power Connection	3-Wire Hardwired, 6-10mm2 (8-10AWG)
Output Power Connection	3-Wire Hardwired, 6-10mm2 (8-10AWG)
Includes:	Two IEC320 C19 16A/250V sockets, Manual Bypass Switch with Indicator Lamps
Input Branch Circuit Breaker	32A, Supplied by User

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Sola S4K5U 6 kVA Model Specifications Cont.

Environmental	
Operating Temperature	0°C to +40°C (+32°F to +104° F)
Storage Temperature	-15°C to +50°C (+5°F to +122° F)
Relative Humidity	0-95% non-condensing
Operating Elevation	Up to 2000m (6600 ft) at 40°C (104° F) without derating
Storage Elevation	15,000m (50,000 ft.) maximum
Audible Noise	<55 dBA, at 1 meter from the rear <50 dBA, at 1 meter from the front or sides
Agency	
Safety	EN62040-1-1; TUV/GS (approval pending)
EMI/EMC/C-Tick EMC	EN50091-2 and AS 62040-2: 2002, Class A; CE EMC Directive
ESD	EN61000-4-2, Level 4, Criteria A
Radiated Susceptibility	EN61000-4-3, Level 3, Criteria A
Electrical Fast Transient	EN61000-4-4, Level 4, Criteria A
Surge Immunity	EN61000-4-5, Level 3, Criteria A
Transportation	ISTA Procedure 1B

External Battery Specifications

Model Number	S4K240BAT
Used w/ UPS model	S4K5U6000-5
Dimensions - inches (mm)	
Unit with bezel (W x D x H)	6.9 x 20.55 x 16.9 (176 x 522 x 430)
Shipping (W x D x H)	22 x 27.2 x 17.9 (560 x 690 x 455)
Weight - lbs (kg)	
Unit	145 (65)
Shipping	173.1 (78.5)
Battery Parameters	
Type	Valve-regulated, non-spillable, flame retardant, lead acid
Qty x V	20 x 12V
Battery Manufacturer, Part #	Yuasa / REW 45-12
Backup Time	See Battery Run Times charts
Environmental	
Operating Temp	0°C to +40°C (+32°F to +104° F)
Storage Temp	-15°C to +50°C (+5°F to +122° F)
Relative Humidity	0-95% non-condensing
Operating Elevation	Up to 2000m (6600 ft.) at 40°C (104° F) without derating
Storage Elevation	15,000m (50,000 ft.) maximum
Agency	
Safety	EN62040-1-1; TUV/GS
Transportation	ISTA Procedure 1B

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Sola S4K5U 6 kVA Model Battery Run Times

	Load %	6000VA
Internal Battery (minutes)	10%	94
	20%	46
	30%	29
	40%	21
	50%	17
	60%	13
	70%	11
	80%	9
	90%	8
	100%	7
Internal Battery +1 External Battery Cabinet (minutes)	10%	222
	20%	124
	30%	81
	40%	60
	50%	49
	60%	39
	70%	33
	80%	28
	90%	24
	100%	21
Internal Battery +2 External Battery Cabinets (minutes)	10%	350
	20%	197
	30%	135
	40%	105
	50%	85
	60%	70
	70%	58
	80%	50
	90%	43
	100%	38
Internal Battery +3 External Battery Cabinets (minutes)	10%	478
	20%	269
	30%	185
	40%	145
	50%	123
	60%	101
	70%	85
	80%	73
	90%	63
	100%	55

	Load %	6000VA
Internal Battery +4 External Battery Cabinets (minutes)	10%	606
	20%	341
	30%	235
	40%	184
	50%	156
	60%	131
	70%	113
	80%	97
	90%	85
	100%	75

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S5K Modular Series Uninterruptible Power Systems (UPS)

This easily upgraded and flexible UPS provides the protection you want, when you need it.

The 5K Modular is scalable from 4 to 20 kVA, offering many flexible options by adding a few standard modules. Designed to be fully configured, tested and shipped in the configuration you need, the 5K Modular also has the ability to be easily upgraded in the field to either higher VA ratings (up to 20 kVA maximum), longer runtimes or to add N+x parallel redundancy. Configurations can be cost-effectively upgraded keeping your 5K Modular current without a large reinvestment in a new system.

The optional N+x redundancy provides a fault-tolerant group of power modules and controls. The modular design is easy to upgrade so the UPS can grow with the needs of the system that is being protected.

Each of the modular components, including 4 kVA power modules, battery modules and system control modules, can be hot-swapped making it easy to increase power, extend your back-up runtime or add redundancy while still providing power protection to the load.

This fault-tolerant system uses intelligent power and battery modules which take themselves off-line if there is a problem — without interrupting power to the load. Self-diagnostic capabilities simplify maintenance and troubleshooting. Each unit incorporates an internal automatic bypass.

Applications

- Network servers
- Enterprise telecommunications systems
- LAN gateways, bridges and routers
- Mini-computers, superservers and server clusters
- Clusters of PCs or workstations and peripherals
- RAID arrays and other large-scale data handling systems

Features

- Scalable for capacity, redundancy, or battery run time offering unbelievable flexibility.
- Built-in intelligence is provided for each individual module using microprocessor controls, increasing functionality, communications and reliability.
- N+x parallel redundancy is easily achieved by adding extra control, power and battery modules.
- Any failed module will automatically take itself off-line while the other modules continue to support the connected equipment.
- Multiple and simultaneous communication ports
- Variable input voltage range minimizes battery operation to increase battery life.
- An automatic internal bypass for maximum availability of output power.
- Continuous sinewave output
- Power factor corrected input reduces reflected distortion and optimizes utility power.
- Two-year limited warranty (Includes factory start up), See the Extended Warranty section for details.

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Chassis Options

The S5K Modular has three chassis available to build on:

- The “A” chassis can accommodate up to 8 modules.
- The “B” chassis can accommodate up to 12 modules and supplies 16 kVA of power, with N+1 redundancy.
- The “C” chassis can accommodate up to 12 modules and supplies a full 20 kVA of power, with N+1 redundancy.

System control modules are not included in module count. All chassis can accommodate up to two system control modules. Select the proper chassis based on your futures need for expansion or redundancy. In most standard (non-redundant) applications, the “A” chassis is the most popular.

Selection Steps

1. Determine the maximum kVA you will need for future expansion.
2. Determine the kVA and run time value for your immediate need.
3. Determine if you need redundancy. If the exact run time is the critical need, use the fully redundant option (see Selection Charts on the following pages).
4. Select the unit that meets both your immediate requirements, and is expandable to your future needs in the “Maximum Upgrade” column in the selection table. The Maximum Upgrade column shows the highest kVA expansion that particular configuration is capable of without removing any of the battery modules from the original configuration.

Specifications

Capacity (VA/Watts)	4 kVA / 2.8 kW to 20 kVA / 14 kW in 4 kVA / 2.8 kW increments
Dimensions - inches	
Unit (H x W x D)	8 module capacity “A” Chassis 41” x 20” x 28” 12 module capacity “B” or “C” Chassis 54” x 20” x 28”
Shipping (H x W x D)	56 in x 32 in x 42 in
Input AC Parameters	
Voltage Range (typical)	170-276 VAC Low line limit variable with load 170VAC from 80 to 100% load 144VAC from 20 to 90% load 127VAC from 20 to 70% load 100VAC at less than 30% load
Voltage Configuration and Connection	Single phase, 2-wire plus ground (L1-L2-G)
Frequency	60Hz nominal 40 - 70 Hz range without operating from battery
Input Connector	Hardwired only
Power Factor	.98 typical
Output AC Parameters	
Voltage	240, 208, 240/120 (120-0-120) or 208/120 (120-0-88)
Receptacles	Optional with use of external Maintenance Bypass
Voltage Regulation	±3 %
Voltage Distortion	Maximum 3% THD for linear loads, maximum 7% THD for full non-linear loads.
Transient Response	< 7% for 100% step load; recovery within 96 ms.
Frequency	60 Hz
Frequency Slew Rate	Selectable up to 5 Hz/sec
Frequency Sync Range	Selectable up to ±5 Hz
Overload	100 to 110% for 10 minutes minimum 111 to 150% 10 seconds 151 to 200% for 2 Cycles
Battery Parameters	
Battery Type	Sealed, lead acid
Recharge Rate	3 to 5 Hrs to 90% capacity
Battery Runtime	See Battery Selection Tables for specific configurations Autonomy time is 6 minutes with an equal number of battery & power modules in a non-redundant configuration at full load
Battery Voltage	120VDC Nominal
Maximum charge current (full load)	3A
Environmental	
Operating Temperature	+32°F to +104°F (0°C to +40°C)
Storage Temperature	+5°F to +122°F (-15°C to +50°C)
Relative Humidity	0% to 95%, non-condensing
Operating Elevation	Up to 10,000 ft. (3000m) at 104°C (40°C) without derating
Storage Elevation	15.000m (50,000 ft.) maximum
Heat Dissipation	1062 BTU / Hour per fully loaded power module (4kVA / 2.8kW)
Audible Noise	< 62 dBA @ 1 meter
Agency	
Safety	UL 1778 listed; c-UL
Compliant Immunity Standards	ANSI C62.41, Class A & B
Routine Maintenance	Keep the UPS clean and cool to enhance system reliability. Occasionally clean or replace the fan intake filters and ensure proper airflow. Do not use liquid or aerosol cleaning fluids. Periodically review the UPS alarm logs

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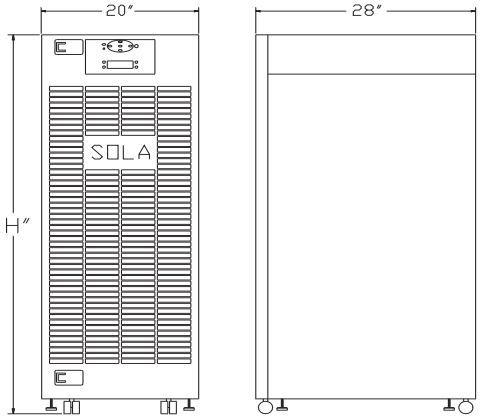
Recommended Part Numbers

(See selection charts for other options)

kVA / kW	P/N# (Standard)	P/N# (Redundant)	Runtime (Min@FL/HL)
4 / 2.8	S5KA4N1A6	S5KA4R1A6	7 / 18
8 / 5.6	S5KA8N2A6	S5KA8R2A6	7 / 18
12 / 8.4	S5KA12N3A6	S5KA12R3A6	7 / 18
16 / 11.2	S5KA16N4A6	S5KB16R4A6	7 / 18
20 / 14	S5KC20N5A6	S5KC20R5A6	7 / 18

Mechanical Diagram

CHASSIS	HEIGHT "H"
A	41"
B	54"
C	54"



Part Number Configuration

The S5K modular is available in many combination. Use the part number template below to identify the description of any given part number.

	Chassis Size	kVA Rating	Unit Type	Number of Battery Modules	Output Voltage	Frequency
Series Designation	**A** = 8 Module, 16 kVA Capacity	**4, 8, 12, 16** or **20** kVA **00** = External Battery	**N** = Standard (Not Redundant)	* Must be at least one per 4 kVA of capacity	**A** = 208/120 1 x 1	**6** = 60 Hz
	B = 12 Module, 16 kVA Capacity		**R** = Redundant Power & Control			
	C = 12 Module, 20 kVA Capacity		**X** = Redundant Power, Battery & Control			
	D = External Battery Cabinet		**B** = Battery Cabinet			
Example: 4 kVA Load, Future Expandable to 16 kVA with 7 minutes of runtime. What is the part number?						
S5K	**A**	**4**	**N**	**1**	**A**	**6**
Resulting catalog number is "S5KA4N1A6"						

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Chassis A: 8 Module Enclosure Selection Chart

System Model Number	Qty of Power Modules Included	Qty of Battery Modules Included	Qty of System Control Modules Included	Unit Weight (lbs)	Runtime Full/Half Load (minutes)	Maximum Upgrade[2]
4kVA / 2.8kW						
S5KA4N1A6	1	1	1	441	7/18	16kVA
S5KA4N2A6	1	2	1	506	19/42	16kVA
S5KA4N3A6	1	3	1	571	30/61	16kVA
S5KA4N4A6	1	4	1	636	42/82	16kVA
S5KA4N5A6	1	5	1	701	52/98	12kVA
S5KA4N6A6	1	6	1	766	62/110	8kVA
S5KA4N7A6	1	7	1	831	75/140	N/A
Redundant (power & control only)						
S5KA4R1A6	2	1	2	472	7/18	12kVA
S5KA4R2A6	2	2	2	537	19/42	12kVA
S5KA4R3A6	2	3	2	602	30/61	12kVA
S5KA4R4A6	2	4	2	667	42/82	12kVA
S5KA4R5A6	2	5	2	732	52/98	8kVA
S5KA4R6A6	2	6	2	797	62/110	N/A
Full Redundant (battery, power & control)[1]						
S5KA4X2A6	2	2	2	537	7/18	12kVA
S5KA4X3A6	2	3	2	602	19/42	12kVA
S5KA4X4A6	2	4	2	667	30/61	8kVA
S5KA4X5A6	2	5	2	732	42/82	N/A
S5KA4X6A6	2	6	2	797	52/98	N/A

Notes:

1. Full redundant units include one redundant battery module. Runtime given does not include this extra module, so actual achieved runtime will be longer than published.
2. The S5K modulars are easily upgraded by adding extra battery and/or power modules as long as the number of modules (battery plus power) does not exceed the number of modules the enclosure is designed to contain.
   - Control modules do not count toward the 8 module max. (2 max control modules per system).
   - There must be at least one battery module per power module installed.

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Chassis A: 8 Module Enclosure Selection Chart

System Model Number	Qty of Power Modules Included	Qty of Battery Modules Included	Qty of System Control Modules Included	Unit Weight (lbs)	Runtime Full/ Half Load (minutes)	Maximum Upgrade[2]
8kVA / 5.6kW						
S5KA8N2A6	2	2	1	532	7 / 19	16kVA
S5KA8N3A6	2	3	1	597	13 / 30	16kVA
S5KA8N4A6	2	4	1	662	19 / 42	16kVA
S5KA8N5A6	2	5	1	727	25 / 52	12kVA
S5KA8N6A6	2	6	1	792	30 / 62	N/A
Redundant (power & control only)						
S5KA8R2A6	3	2	2	563	7 / 19	12kVA
S5KA8R3A6	3	3	2	628	13 / 30	12kVA
S5KA8R4A6	3	4	2	693	19 / 42	12kVA
S5KA8R5A6	3	5	2	758	25 / 52	N/A
Full Redundant (battery, power & control)[1]						
S5KA8X3A6	3	3	2	628	7 / 19	12kVA
S5KA8X4A6	3	4	2	693	13 / 30	N/A
S5KA8X5A6	3	5	2	758	19 / 42	N/A
12kVA / 8.4kW						
S5KA12N3A6	3	3	1	623	7 / 19	16kVA
S5KA12N4A6	3	4	1	688	11 / 27	16kVA
S5KA12N5A6	3	5	1	753	15 / 34	N/A
Redundant (power & control only)						
S5KA12R3A6	4	3	2	654	7 / 19	N/A
S5KA12R4A6	4	4	2	719	11 / 27	N/A
Full Redundant (battery, power & control)[1]						
S5KA12X4A6	4	4	2	719	7 / 19	N/A
16kVA / 11.2kW						
S5KA16N4A6	4	4	1	714	7 / 19	N/A

Notes:

1. Full redundant units include one redundant battery module. Runtime given does not include this extra module, so actual achieved runtime will be longer than published.

2. The S5K modulars are easily upgraded by adding extra battery and/or power modules as long as the number of modules (battery plus power) does not exceed the number of modules the enclosure is designed to contain.
   - Control modules do not count toward the 8 module max. (2 max control modules per system).
   - There must be at least one battery module per power module installed.

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Chassis B: 12 Module, 4 kVA Enclosure Selection Chart

System Model Number	Qty of Power Modules Included	Qty of Battery Modules Included	Qty of System Control Modules Included	Unit Weight (lbs)	Runtime Full/Half Load (minutes)	Maximum Upgrade[2]
4 kVA / 2.8 kW						
S5KB4N1A6	1	1	1	496	7 / 18	16 kVA
S5KB4N2A6	1	2	1	561	19 / 42	16 kVA
S5KB4N3A6	1	3	1	626	30 / 61	16 kVA
S5KB4N4A6	1	4	1	691	42 / 82	16 kVA
S5KB4N5A6	1	5	1	756	52 / 98	16 kVA
S5KB4N6A6	1	6	1	821	62 / 110	16 kVA
S5KB4N7A6	1	7	1	886	75 / 140	16 kVA
S5KB4N8A6	1	8	1	951	92 / 170	16 kVA
S5KB4N9A6	1	9	1	1016	100 / 190	12 kVA
S5KB4N10A6	1	10	1	1081	110 / 220	8 kVA
S5KB4N11A6	1	11	1	1146	120 / 250	N/A
Redundant (power & control only)						
S5KB4R1A6	2	1	2	527	7 / 18	16 kVA
S5KB4R2A6	2	2	2	592	19 / 42	16 kVA
S5KB4R3A6	2	3	2	657	30 / 61	16 kVA
S5KB4R4A6	2	4	2	722	42 / 82	16 kVA
S5KB4R5A6	2	5	2	787	52 / 98	16 kVA
S5KB4R6A6	2	6	2	852	62 / 110	16 kVA
S5KB4R7A6	2	7	1	917	75 / 140	16 kVA
S5KB4R8A6	2	8	1	982	92 / 170	12 kVA
S5KB4R9A6	2	9	1	1047	100 / 190	8 kVA
S5KB4R10A6	2	10	1	1112	110 / 220	N/A
Full Redundant (battery, power & control)[1]						
S5KB4X2A6	2	2	2	592	7 / 18	16 kVA
S5KB4X3A6	2	3	2	657	19 / 42	16 kVA
S5KB4X4A6	2	4	2	722	30 / 61	16 kVA
S5KB4X5A6	2	5	2	787	42 / 82	16 kVA
S5KB4X6A6	2	6	2	852	52 / 98	16 kVA
S5KB4X7A6	2	7	2	917	62 / 110	16 kVA
S5KB4X8A6	2	8	2	982	75 / 140	12 kVA
S5KB4X9A6	2	9	2	1047	92 / 170	8 kVA
S5KB4X10A6	2	10	2	1112	100 / 190	N/A

Notes:

See previous page.

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Chassis B: 12 Module, 8 kVA Enclosure Selection Chart

System Model Number	Qty of Power Modules Included	Qty of Battery Modules Included	Qty of System Control Modules Included	Unit Weight (lbs)	Runtime Full/Half Load (minutes)	Maximum Upgrade[2]
8kVA / 5.6kW						
S5KB8N2A6	2	2	1	587	7 / 19	16kVA
S5KB8N3A6	2	3	1	652	13 / 30	16kVA
S5KB8N4A6	2	4	1	717	19 / 42	16kVA
S5KB8N5A6	2	5	1	782	25 / 52	16kVA
S5KB8N6A6	2	6	1	847	30 / 62	16kVA
S5KB8N7A6	2	7	1	912	38 / 75	16kVA
S5KB8N8A6	2	8	1	977	43 / 92	16kVA
S5KB8N9A6	2	9	1	1042	47 / 100	12kVA
S5KB8N10A6	2	10	1	1107	54 / 110	N/A
Redundant (power & control only)						
S5KB8R2A6	3	2	2	618	7 / 19	16kVA
S5KB8R3A6	3	3	2	683	13 / 30	16kVA
S5KB8R4A6	3	4	2	748	19 / 42	16kVA
S5KB8R5A6	3	5	2	813	25 / 52	16kVA
S5KB8R6A6	3	6	2	878	30 / 62	16kVA
S5KB8R7A6	3	7	2	943	38 / 75	16kVA
S5KB8R8A6	3	8	2	1008	43 / 92	12kVA
S5KB8R9A6	3	9	2	1073	47 / 100	N/A
Full Redundant (battery, power & control)[1]						
S5KB8X3A6	3	3	2	628	7 / 19	16kVA
S5KB8X4A6	3	4	2	693	13 / 30	16kVA
S5KB8X5A6	3	5	2	758	19 / 42	16kVA
S5KB8X6A6	3	6	2	878	25 / 52	16kVA
S5KB8X7A6	3	7	2	943	30 / 62	16kVA
S5KB8X8A6	3	8	2	1008	38 / 75	12kVA
S5KB8X9A6	3	9	2	1073	43 / 92	N/A

Notes: (Apply to all 12 Module Tables)

1. Full redundant units include one redundant battery module. Runtime given does not include this extra module, so actual achieved runtime will be longer than published.

2. The S5K modulars are easily upgraded by adding extra battery and/or power modules as long as the number of modules (battery plus power) does not exceed the number of modules the enclosure is designed to contain.
   - Control modules do not count toward the 8 module max. (2 max control modules per system).
   - There must be at least one battery module per power module installed.

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contact **Technical Services** at **(800) 377-4384** with any questions.

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Chassis B: 12 Module, 12 and 16 kVA Enclosure Selection Chart

System Model Number	Qty of Power Modules Included	Qty of Battery Modules Included	Qty of System Control Modules Included	Unit Weight (lbs)	Runtime Full/Half Load (minutes)	Maximum Upgrade[2]
12kVA / 8.4kW						
S5KB12N3A6	3	3	1	678	7 / 19	16kVA
S5KB12N4A6	3	4	1	743	11 / 27	16kVA
S5KB12N5A6	3	5	1	808	15 / 34	16kVA
S5KB12N6A6	3	6	1	873	18 / 41	16kVA
S5KB12N7A6	3	7	1	938	24 / 50	16kVA
S5KB12N8A6	3	8	1	1003	27 / 58	16kVA
S5KB12N9A6	3	9	1	1068	29 / 63	N/A
Redundant (power & control only)						
S5KB12R3A6	4	3	2	709	7 / 19	16kVA
S5KB12R4A6	4	4	2	774	11 / 27	16kVA
S5KB12R5A6	4	5	2	839	15 / 34	16kVA
S5KB12R6A6	4	6	2	904	18 / 41	16kVA
S5KB12R7A6	4	7	2	969	24 / 50	16kVA
S5KB12R8A6	4	8	2	1034	27 / 58	N/A
Full Redundant (battery, power & control)[1]						
S5KB12X4A6	4	4	2	719	7 / 19	16kVA
S5KB12X5A6	4	5	2	839	11 / 27	16kVA
S5KB12X6A6	4	6	2	904	15 / 34	16kVA
S5KB12X7A6	4	7	2	969	18 / 41	16kVA
S5KB12X8A6	4	8	2	1034	24 / 50	N/A
16kVA / 11.2kW						
S5KB16N4A6	4	4	1	769	7 / 19	N/A
S5KB16N5A6	4	5	1	834	11 / 27	N/A
S5KB16N6A6	4	6	1	899	15 / 34	N/A
S5KB16N7A6	4	7	1	964	16 / 38	N/A
S5KB16N8A6	4	8	1	1029	19 / 43	N/A
Redundant (power & control only)						
S5KB16R4A6	5	4	2	800	7 / 19	N/A
S5KB16R5A6	5	5	2	865	10 / 25	N/A
S5KB16R6A6	5	6	2	930	12 / 30	N/A
S5KB16R7A6	5	7	2	995	16 / 38	N/A
Full Redundant (battery, power & control)[1]						
S5KB16X5A6	5	5	2	865	7 / 19	N/A
S5KB16X6A6	5	6	2	930	10 / 25	N/A
S5KB16X7A6	5	7	2	995	12 / 30	N/A

Note: See previous page.

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Chassis C: 12 Module, 20 kVA Enclosure Selection Chart

System Model Number	Qty of Power Modules Included	Qty of Battery Modules Included	Qty of System Control Modules Included	Unit Weight (lbs)	Runtime Full/Half Load (minutes)	Maximum Upgrade[2]
12 kVA / 8.4 kW						
S5KC12N3A6	3	3	1	744	7 / 19	20 kVA
S5KC12N4A6	3	4	1	809	12 / 24	20 kVA
S5KC12N5A6	3	5	1	874	16 / 36	20 kVA
S5KC12N6A6	3	6	1	939	20 / 43	20 kVA
S5KC12N7A6	3	7	1	1004	24 / 51	20 kVA
S5KC12N8A6	3	8	1	1069	28 / 60	16 kVA
S5KC12N9A6	3	9	1	1134	32 / 68	N/A
Redundant (power & control only)						
S5KC12R3A6	4	3	2	775	7 / 19	20 kVA
S5KC12R4A6	4	4	2	846	12 / 24	20 kVA
S5KC12R5A6	4	5	2	905	16 / 36	20 kVA
S5KC12R6A6	4	6	2	970	20 / 43	20 kVA
S5KC12R7A6	4	7	2	1035	24 / 51	16 kVA
S5KC12R8A6	4	8	2	1100	28 / 60	N/A
Full Redundant (battery, power & control)[1]						
S5KC12X4A6	4	4	2	840	7 / 19	20 kVA
S5KC12X5A6	4	5	2	905	12 / 24	20 kVA
S5KC12X6A6	4	6	2	970	16 / 36	20 kVA
S5KC12X7A6	4	7	2	1035	20 / 43	16 kVA
S5KC12X8A6	4	8	2	1100	24 / 51	N/A
16 kVA / 11.2 kW						
S5KC16N4A6	4	4	1	835	7 / 19	20 kVA
S5KC16N5A6	4	5	1	900	9 / 25	20 kVA
S5KC16N6A6	4	6	1	965	13 / 31	20 kVA
S5KC16N7A6	4	7	1	1030	17 / 37	20 kVA
S5KC16N8A6	4	8	1	1095	19 / 43	N/A
Redundant (power & control only)						
S5KC16R4A6	5	4	2	866	7 / 19	20 kVA
S5KC16R5A6	5	5	2	931	9 / 25	20 kVA
S5KC16R6A6	5	6	2	996	13 / 31	20 kVA
S5KC16R7A6	5	7	2	1061	17 / 37	N/A
Full Redundant (battery, power & control)[1]						
S5KC16X5A6	5	5	2	931	7 / 19	20 kVA
S5KC16X6A6	5	6	2	996	9 / 25	20 kVA
S5KC16X7A6	5	7	2	1061	13 / 31	N/A
20 kVA / 13 kW						
S5KC20N5A6	5	5	1	926	7 / 19	N/A
S5KC20N6A6	5	6	1	991	9 / 24	N/A
S5KC20N7A6	5	7	1	1056	12 / 29	N/A
Redundant (power & control only)						
S5KC20R5A6	6	5	2	957	7 / 19	N/A
S5KC20R6A6	6	6	2	1033	9 / 24	N/A
Full Redundant (battery, power & control)[1]						
S5KC20X6A6	6	6	2	1022	7 / 19	N/A

Note: See previous page (p. 70).

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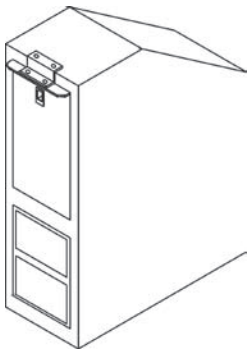
Maintenance Bypass Options

The S5K Modular Series Maintenance Bypass Cabinet provides complete "wrap around" protection and allows the UPS to be pulled from service without interrupting power to the loads.



Front View

The Maintenance Bypass Cabinet controls are located behind a lockable front panel to provide operation security. Controls include a manual bypass transfer switch, UPS input disconnect switch, and a branch rated output circuit breaker. Indicator lamps provide visual confirmation that the UPS input, UPS output, and bypass source are available. Models are available with and without an isolation transformer in the bypass path. The Maintenance Bypass with Transformer option provides isolation in the bypass path as well as flexibility with utility voltages. The transformer provides simultaneous output voltages of 120/120/208/240 V regardless of whether the input voltage is 208 or 240 V.

The Maintenance Bypass ships on a wooden pallet with a metal pull out ramp. The bypass cabinet includes casters and leveling feet as well as floor mounting brackets (brackets are used to secure bypass cabinet to pallet during shipping).

The Maintenance Bypass has a two year parts and labor warranty. Basic start-up is included, if the bypass cabinet is purchased at the same time as the S5K Modular UPS. Start-up of the Maintenance Bypass must occur at the same time as start-up of the UPS.

The S5KMBS-00-ISO hardwired Maintenance Bypass can be reconfigured by removing the provided plates and adding the Receptacle Kit options. The S5KMBS-00-ISO has 8 blank plates. Each plate can be removed and a Receptacle Kit option installed by a qualified electrician or electrical contractor. The hardwired output provision may also be removed adding slots for two (2) more Receptacle Kits (for a total of 10 Kits Maximum per MBS). Reassembled configurations are available for those who would prefer the MBS arrive with any needed receptacles already installed. Contact your local Sola/Hevi-Duty Sales Representative for details.

Maintenance Bypass Switch (MBS)

Catalog Number	Description	Dimensions (H x W x D) / in (mm) Weight (lbs/kg)
Hardwired MBS		
S5KMBS-00-ISO	Hardwired Bypass w/ 120/120/208/240 V output with isolation transformer	30.4 in x 9.5 in x 26.5 in (775 x 241 x 700) 300 lbs (130 kg)
S5KMBS-00*	Hardwired Bypass w/ 208 or 240 V output (does not support 120 V loads)	
S5KMBS-CO-ISO	Hardwired Bypass w/ 120/120/208/240 V output with 20 kVA isolation transformer	
S5KMBS-CO*	Hardwired Bypass w/ 208 or 240 V output	
MBS with pre-configured distribution options		
S5KMBS-01-ISO	Bypass w/ 120/120/240 V output with isolation transformer & the following receptacle options: (10) Duplex 5-15R	30.4 in x 9.5 in x 26.5 in (775 x 241 x 700) 300 lbs (130 kg)
S5KMBS-02-ISO	Bypass w/ 120/120/240 V output with isolation transformer & the following receptacle options: (6) Duplex 5-15R (2) Duplex 5-20R (1)L14-30R 120/120/240 V	
S5KMBS-03-ISO	Bypass w/ 120/120/240V output with the following receptacle options: (4) Duplex 5-20R (2) L5-20R (2) L6-20R - 240 V (2) L6-30R - 240	

*Note: Unit does not include an isolation transformer and does not support 120V loads.

Maintenance Bypass Options

Optional wiring kits include all necessary conduit, wiring and conduit fittings to make the input and output connections between the UPS and the Maintenance Bypass.

MBS Wiring Kit Options	
Catalog Number	**Description (right or left side as viewed from front)**
S5KWKITR	Bypass without transformer, mounted on right of UPS
S5KWKITL	Bypass without transformer, mounted on left of UPS
S5KWKITR-ISO	Bypass with transformer, mounted on right of UPS
S5KWKITL-ISO	Bypass with transformer, mounted on left of UPS

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Receptacle Kit Options (max qty 10 per MBS)

Catalog Number	Description
S5K120HW15KIT	Hardwire kit, 120V, 15A (1) Pole Breaker, 1/2" & 3/4" knockout
S5K208HW15KIT	Hardwire kit, 208V, 15A (2) Pole Breaker, 1/2" & 3/4" knockout
S5K240HW15KIT	Hardwire kit, 240V, 15A (2) Pole Breaker, 1/2" & 3/4" knockout
S5K515R2KIT	Duplex NEMA 5-15R Receptacle Kit
S5KL515RKIT	Duplex NEMA L5-15R Receptacle Kit
S5K615R2KIT208	NEMA 6-15R 208VAC Receptacle Kit
S5K615R2KIT240	NEMA 6-15R 240VAC Receptacle Kit
S5KL615R2KIT208	NEMA L6-15R 208VAC Receptacle Kit
S5KL615R2KIT240	NEMA L6-15R 240VAC Receptacle Kit
S5K120HW20KIT	Hardwire kit, 120V, 20A (1) Pole Breaker, 1/2" & 3/4" knockout
S5K208HW20KIT	Hardwire kit, 208V, 20A (2) Pole Breaker, 1/2" & 3/4" knockout
S5K240HW20KIT	Hardwire kit, 240V, 20A (2) Pole Breaker, 1/2" & 3/4" knockout
S5K520R2KIT	Duplex NEMA 5-20R Receptacle Kit
S5KL520RKIT	NEMA L5-20R Receptacle Kit
S5KL620RKIT208	NEMA L6-20R 208VAC Receptacle Kit
S5KL620RKIT240	NEMA L6-20R 240VAC Receptacle Kit
S5KL1420RKIT	NEMA L14-20R 120/120/240 Receptacle Kit
S5K120HW30KIT	Hardwire kit, 120V, 30A (1) Pole Breaker, 1/2" & 3/4" knockout
S5K208HW30KIT	Hardwire kit, 208V, 30A (2) Pole Breaker, 1/2" & 3/4" knockout
S5K240HW30KIT	Hardwire kit, 240V, 30A (2) Pole Breaker, 1/2" & 3/4" knockout
S5KL530RKIT	NEMA L5-30R Receptacle Kit
S5KL630RKIT208	NEMA L6-30R 208VAC Receptacle Kit
S5KL630RKIT240	NEMA L6-30R 240VAC Receptacle Kit
S5KL1430RKIT	NEMA L14-30R 120/120/240 Receptacle Kit

External Battery Options*

Catalog Number	Number of Battery Modules	Shipping Weight (lbs)
S5KD00B1200	12	1107
S5KD00B1100	11	1041
S5KD00B1000	10	975
S5KD00B0900	9	909
S5KD00B0800	8	843
S5KD00B0700	7	777
S5KD00B0600	6	711
S5KD00B0500	5	645
S5KD00B0400	4	579
S5KD00B0300	3	513
S5KD00B0200	2	447
S5KD00B0100	1	381
Pluggable Cables for Extended Battery Options		
S5KEXTBC3	3-foot pluggable battery cable for connection between extended battery cabinet and UPS	
S5KEXTBC15	15-foot pluggable battery cable for connection between extended battery cabinet and UPS	
S5KEXLBCKIT	External battery cable adapter (allows hardwire of up to 25-feet of customer supplied battery cable and conduit, (2) required for use with extended battery cabinet	

* Pluggable cables for external battery options.

Optional Equipment

Expansion Module Options		
Catalog Number	**Description**	**Approx. Ship Weight**
S5K4KPWR	4 kVA / 2.8 kW Power Module	30 lbs
S5KBATT	Battery Module	70 lbs
S5KCNTRL	Control Module	7 lbs
Communication Options		
Catalog Number	**Description**	
SNMP WEB CARD	Ethernet communications kit, (Supports SNMP, HTTP & OCP) includes SNMP hardware, MIB, configuration cable and installation manual.	
RELAY CARD-INT	Relay contact board, relay contact signals for "On Battery", "Low Battery", "On Bypass", "On UPS", "Summary Alarm" and "UPS Fault".	
S5KREPOKIT	Remote Emergency Power Off Kit includes 50' length of cable with connector to UPS and external push button switch.	
External Battery Connections		
S5KEXTBC3	3 foot Battery Connection Cable	
S5KBATKIT	Battery Connection Kit allows up to 25' or customer supplied cable and conduit.	

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